

**Listing of Claims:**

Please **amend** the claims as follows:

**Claim 1 (Withdrawn)** An isolated polynucleotide comprising a polynucleotide chosen from:

- (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NO: 2 or fragments or analogs thereof;
- (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NO: 2 or fragments or analogs thereof;
- (c) a polynucleotide encoding a polypeptide comprising a sequence chosen from: SEQ ID NO: 2 or fragments or analogs thereof;
- (d) a polynucleotide encoding a polypeptide capable of generating antibodies having binding specificity for a polypeptide comprising a sequence chosen from: SEQ ID NO: 2 or fragments or analogs thereof;
- (e) a polynucleotide encoding an epitope bearing portion of a polypeptide comprising a sequence chosen from SEQ ID NO: 2 or fragments or analogs thereof;
- (f) a polynucleotide comprising a sequence chosen from SEQ ID NO: 1 or fragments or analogs thereof;
- (g) a polynucleotide that is complementary to a polynucleotide in (a), (b), (c), (d), (e) or (f).

**Claim 2 (Withdrawn)** An isolated polynucleotide comprising a polynucleotide chosen from:

- (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NO: 2;
- (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NO: 2;
- (c) a polynucleotide encoding a polypeptide comprising a sequence chosen from: SEQ ID NO: 2;

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

- (d) a polynucleotide encoding a polypeptide capable of raising antibodies having binding specificity for a polypeptide comprising a sequence chosen from: SEQ ID NO: 2;
- (e) a polynucleotide encoding an epitope bearing portion of a polypeptide comprising a sequence chosen from SEQ ID NO: 2;
- (f) a polynucleotide comprising a sequence chosen from SEQ ID NO: 1;
- (g) a polynucleotide that is complementary to a polynucleotide in (a), (b), (c), (d), (e) or (f).

**Claim 3** (Withdrawn) The polynucleotide of claim 1, wherein said polynucleotide is DNA.

**Claim 4** (Withdrawn) The polynucleotide of claim 2, wherein said polynucleotide is DNA.

**Claim 5** (Withdrawn) The polynucleotide of claim 1, wherein said polynucleotide is RNA.

**Claim 6** (Withdrawn) The polynucleotide of claim 2, wherein said polynucleotide is RNA.

**Claim 7** (Withdrawn) The polynucleotide of claim 1 that hybridizes under stringent conditions to either

- (a) a DNA sequence encoding a polypeptide or
  - (b) the complement of a DNA sequence encoding a polypeptide;
- wherein said polypeptide comprises SEQ ID NO: 2, or fragments or analogs thereof.

**Claim 8** (Withdrawn) The polynucleotide of claim 2 that hybridizes under stringent conditions to either

- (a) a DNA sequence encoding a polypeptide or
  - (b) the complement of a DNA sequence encoding a polypeptide;
- wherein said polypeptide comprises SEQ ID NO: 2.

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

**Claim 9 (Withdrawn)** The polynucleotide of claim 1 that hybridizes under stringent conditions to either

- (a) a DNA sequence encoding a polypeptide or
- (b) the complement of a DNA sequence encoding a polypeptide;  
wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising SEQ ID NO: 2, or fragments or analogs thereof.

**Claim 10 (Withdrawn)** The polynucleotide of claim 2 that hybridizes under stringent conditions to either

- (a) a DNA sequence encoding a polypeptide or
- (b) the complement of a DNA sequence encoding a polypeptide;  
wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising SEQ ID NO: 2.

**Claim 11 (Withdrawn)** A vector comprising the polynucleotide of claim 1, wherein said DNA is operably linked to an expression control region.

**Claim 12 (Withdrawn)** A vector comprising the polynucleotide of claim 3, wherein said DNA is operably linked to an expression control region.

**Claim 13 (Withdrawn)** A host cell transfected with the vector of claim 11.

**Claim 14 (Withdrawn)** A host cell transfected with the vector of claim 12.

**Claim 15 (Withdrawn)** A process for producing a polypeptide comprising culturing a host cell according to claim 13 under conditions suitable for expression of said polypeptide.

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

**Claim 16 (Withdrawn)** A process for producing a polypeptide comprising culturing a host cell according to claim 14 under condition suitable for expression of said polypeptide.

**Claim 17 (Currently Amended)** An isolated polypeptide comprising a polypeptide which is ~~chosen from:~~

- (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof;
- (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof;
- (c) a polypeptide comprising a sequence chosen from SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof;
- (d) a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof;
- (e) an epitope bearing portion of a polypeptide having a sequence chosen from SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof;
- (f) the polypeptide of (a), (b), (c), (d), or (e) wherein the N-terminal Met residue is deleted; or
- (g) the polypeptide of (a), (b), (c), (d), (e), or (f) wherein the secretory amino acid sequence is deleted.

**Claim 18 (Currently Amended)** An isolated polypeptide comprising a polypeptide which is ~~chosen from:~~

- (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2;

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

- (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2;
- (c) a polypeptide comprising a sequence chosen from SEQ ID NO: 2
- (d) a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NO: 2;
- (e) an epitope bearing portion of a polypeptide having a sequence chosen from SEQ ID NO: 2;
- (f) the polypeptide of (a), (b), (c), (d), or (e) wherein the N-terminal Met residue is deleted; or
- (g) the polypeptide of (a), (b), (c), (d), (e), or (f) wherein the secretory amino acid sequence is deleted.

**Claim 19 (Currently Amended)** A chimeric polypeptide comprising two or more polypeptides having a sequence chosen from SEQ ID NO: 2, or fragments comprising at least ten contiguous amino acids ~~or analogs~~ thereof; provided that the polypeptides are linked as to ~~formed~~ form a chimeric polypeptide.

**Claim 20 (Currently Amended)** A chimeric polypeptide comprising two or more polypeptides, wherein at least one polypeptide having ~~a sequence~~ an amino acid sequence of at least ten contiguous amino acids chosen from SEQ ID NO: 2; provided that the polypeptides are linked as to ~~formed~~ form a chimeric polypeptide.

**Claim 21 (Previously Presented)** A pharmaceutical composition comprising a polypeptide according to claim 17 and a pharmaceutically acceptable carrier, diluent or adjuvant.

**Claim 22 (Withdrawn)** A method for prophylactic or therapeutic treatment of pharyngitis, erysipelas and impetigo, scarlet fever, and invasive diseases such as bacteremia and necrotizing fasciitis in a host susceptible to pharyngitis, erysipelas and impetigo, scarlet fever, and invasive

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

diseases such as bacteremia and necrotizing fasciitis and also toxic shock comprising administering to said host a prophylactic or therapeutic amount of a composition according to claim 21.

**Claim 23 (Withdrawn)** A method for prophylactic or therapeutic treatment of *Streptococcus pyogenes* bacterial infection in a host susceptible to *Streptococcus pyogenes* infection comprising administering to said host a prophylactic or therapeutic amount of a composition according to claim 21.

**Claim 24 (Withdrawn)** A method according to claim 22 wherein the host is an animal.

**Claim 25 (Withdrawn)** A method according to claim 22 wherein the host is a human.

**Claim 26 (Withdrawn)** A method for diagnostic of streptococcal infection in a host susceptible to streptococcal infection comprising

- (a) obtaining a biological sample from a host;
- (b) incubating an antibody or fragment thereof reactive with a streptococcal polypeptide of claim 17 with the biological sample to form a mixture; and
- (c) detecting specifically bound antibody or bound fragment in the mixture which indicates the presence of streptococcal.

**Claim 27 (Withdrawn)** A method for detection of antibody specific to streptococcus antigen in a biological sample comprising

- (a) obtaining a biological sample from a host;
- (b) incubating one or more streptococcal polypeptides of claim 17 or fragments thereof with the biological sample to form a mixture; and
- (c) detecting specifically bound antigen or bound fragment in the mixture which indicates the presence of antibody specific to streptococcus.

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

**Claim 28 (Withdrawn)** A method of preparing a pharmaceutical composition for the prophylactic or therapeutic treatment of streptococcal infection comprising combining a polypeptide according to claim 17 with a pharmaceutically acceptable carrier, diluent or adjuvant.

**Claim 29 (Withdrawn)** A kit for detection or diagnosis of streptococcal infection comprising a polypeptide according to claim 17, and instructions for use of the polypeptide in the detection or diagnosis of streptococcal infection.

**Claim 30 (Previously Presented)** A pharmaceutical composition comprising a polypeptide according to claim 18 and a pharmaceutically acceptable carrier, diluent or adjuvant.

**Claim 31 (Withdrawn)** A method for diagnostic of streptococcal infection in a host susceptible to streptococcal infection comprising

- (d) obtaining a biological sample from a host;
- (e) incubating an antibody or fragment thereof reactive with a streptococcal polypeptide of claim 18 with the biological sample to form a mixture; and
- (f) detecting specifically bound antibody or bound fragment in the mixture which indicates the presence of streptococcal.

**Claim 32 (Withdrawn)** A method for detection of antibody specific to streptococcus antigen in a biological sample comprising

- (a) obtaining a biological sample from a host;
- (b) incubating one or more streptococcal polypeptides of claim 18 or fragments thereof with the biological sample to form a mixture; and
- (c) detecting specifically bound antigen or bound fragment in the mixture which indicates the

§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

presence of antibody specific to streptococcus.

**Claim 33 (Withdrawn)** A method of preparing a pharmaceutical composition for the prophylactic or therapeutic treatment of streptococcal infection comprising combining a polypeptide according to claim 18 with a pharmaceutically acceptable carrier, diluent or adjuvant.

**Claim 34 (Withdrawn)** A kit for detection or diagnosis of streptococcal infection comprising a polypeptide according to claim 18, and instructions for use of the polypeptide in the detection or diagnosis of streptococcal infection.

**Claim 35 (New)** An isolated polypeptide of claim 17, which comprises at least one epitope that elicits antibodies specific for *S. pyogenes*.

**Claim 36 (New)** An isolated polypeptide of claim 18, which comprises at least one epitope that elicits antibodies specific for *S. pyogenes*.

**Claim 37 (New)** An isolated polypeptide of claim 17, having at least 95% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2, or fragments thereof comprising at least ten contiguous amino acids.

**Claim 38 (New)** An isolated polypeptide of claim 17 which is SEQ ID NO:2, or fragments thereof comprising at least ten contiguous amino acids.

**Claim 39 (New)** An isolated polypeptide of claim 19, having at least 95% identity to a second polypeptide having an amino acid sequence comprising: SEQ ID NO: 2.



§Appl. No. 10/078,531  
Amdt. dated August 25, 2004  
Reply to Office Action of, May 27, 2004

**Claim 40** (New) An isolated polypeptide of claim 19, which is SEQ ID NO:2.

**Claim 41** (New) An isolated BVH-P7 polypeptide from a *S. pyogenes* strain comprising at least 90% amino acid sequence identity to SEQ ID NO:2, or fragments thereof comprising at least ten contiguous amino acids thereof, and wherein said polypeptide comprises at least one epitope that elicits antibodies specific for *S. pyogenes*.

**Claim 42** (New) An isolated polypeptide of claim 17, wherein said polypeptide hybridizes to SEQ ID NO:1 under stringent conditions.